

Robot Fiber Laser Welding

**Focus on spot welding machine and
laser welding machine for 18 years**

Global 3000+ customers use PDKJ.



INTRODUCTION



Spot welding machine

Laser welder

Welding automation

PDKJ started in 2006, is a professional welding automation equipment solution provider; after 18 years of development, training a group of experienced, innovative senior R & D, design, manufacturing engineers, a group of excellent quality of pre-sales, sales, after-sales technical service personnel, the construction of the industry's larger-scale R & D and production bases, set up an industry Post-doctoral research station. In the field of resistance welding and laser welding, we have the leading technology and cost advantage.



International Quality World Recognition

The company has passed ISO9001 quality management system certification, the company's products have obtained a number of national CCC certification, the European Union CE certification and the North American CSA safety certification, is committed to providing users with professional, detailed welding automation solutions and services. At present, our company has formally authorized and applied for more than 70 national patents, a number of core technologies in the field of welding to fill the gaps at home and abroad, is a national high-tech enterprises with a number of core technologies.

High Power ▪ High Precision ▪ High Efficiency

Robotic Fiber Laser Welding Workstation

Dual station, uninterrupted Versatility, consistent welding



Robot fiber laser welding workstation is an advanced equipment integrating robot technology, laser welding technology and automation technology. The workstation is mainly composed of robot, laser generator, laser transmission system, welding head, worktable and control system. The working principle of the robot fiber laser welding workstation is to control the movement trajectory of the welding head through the robot to focus the laser beam on the workpiece to achieve high-precision welding. Due to the use of fiber optic transmission laser, it can avoid the problem of using a large number of mirrors and focusing mirrors, which is required in traditional laser welding, and improve the quality of the beam and the stability of welding.

Advantages of PDKJ Robot



1 Easy to operate

No need for professional welders, simple operation, novice trainees can complete repetitive trajectory positioning, high-precision control of welding time and welding strength, and other operations

2 High precision and quality

Welding using a laser beam has very high accuracy. This means that finer welding control can be achieved during the welding process, thereby improving product quality and consistency. The weld seam is more uniform, reducing the defect rate caused by welding errors

3 Efficient production

Has high work speed and production efficiency. Robots can complete a large amount of welding work in a short period of time, greatly improving production speed and reducing production costs compared to manual welding.

4 Automation and uninterrupted production

Automated welding processes achieved without the need for continuous manual supervision. This makes the production process more continuous and stable, reduces downtime on the production line, and improves overall production efficiency.

5 Labor cost savings

Reduced reliance on manpower, thereby lowering labor costs. At the same time, it also reduces the potential danger to workers due to the working environment and improves the safety of the workplace.

6 Versatile and programmable

One machine for multiple uses, It can adapt to different welding tasks through reprogramming. This makes it easier for enterprises to adapt to market changes and the demand for product updates, improves the universality of production lines, and meets the automation needs of small-scale and customized production.

PDKJ robot welding workstation

1、 According to the customer's needs to select the robot

PDKJ conducted a large number of repeated tests on the mainstream robots on the market, and selected the three most stable and cost-effective solutions for customers to choose from, including high repeatability, IP54 for harsh environments, and the most stable and cost-effective solutions.



Manipulator and control box

2、 Torches can be used as handheld torches, industrial torches, vibratory mirrors

Handheld welding torch can be installed and removed, can be removed for manual welding when needed.

The industrial welding torch has a wider swing angle, double swing welding, multi-angle welding, and on-screen adjustable display.

(Screen display parameters: swing width, red light pattern, frequency)

Laser oscillator through precise control of the laser beam focusing and movement, to achieve precise spaced welding, realize some other welding process can not complete the welding, and welding speed is very fast.



Torch (wire feed) and galvanometer

3、 Laser welding power options 1200W, 1500W, 2000W, 3000W

PDKJ laser welding machine is the high-end brand of domestic welding machine, after a large number of customers to use the testimony and improvement, become the most stable market surface, can be used with the highest intensity of the laser welding machine.



PDKJ laser host

4、 Professional welding station and customized automation fixture are available as options.

PDKJ is a mature and automation solution provider with excellent engineers and experience in customizing laser welding automation lines for domestic automotive factories.

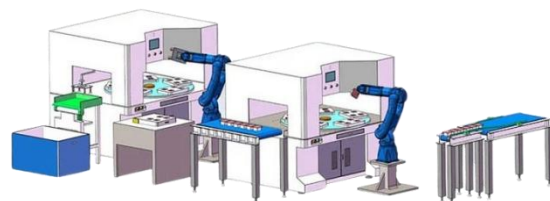
PDKJ can customize the automation fixture with advanced identification technology, which can accurately identify the position of the workpiece and automatically adjust the fixture to ensure the accuracy of the welding position. The welding fixture is made of high-strength materials and precision machined to ensure that the fixture always remains stable and does not deform during use, allowing you to weld more accurately. One fixture is multi-purpose, making your welding work more convenient and efficient!



Welding table and custom fixture

5 、 Customizable loading and unloading automation

Different production lines have different needs, and we know it. That's why we offer customized loading and unloading automation services, tailoring the automation solution that best suits your specific needs. Automated loading and unloading systems utilize advanced mechanical design and control technology to ensure stability and reliability over long periods of time, dramatically increasing production efficiency.



6 、 Multi-station option to ensure welding efficiency

Multi-station parallel, efficiency soaring, flexible adjustment, adaptable. One side welding, one side loading, the maximum program to reduce the machine downtime waiting time, the manpower and machine to play the maximum utility, significantly improve production efficiency.



7、 Optional multi-robot welding collaboration

Collaborative work, multiply efficiency, multiple welding robots through precise cooperation, seamless connection, realize parallel processing of welding tasks and assembly line operation, significantly improve the production efficiency.

Larger welding angle, wider welding range, can allow to break through the scope of a single robot arm span, to realize larger workpieces, more complex automated welding.



8、 Optional non-contact welding seam tracking system

It detects and corrects the deviation of the weld seam in real time to ensure the welding effect. It does not need to be in direct contact with the weld seam to realize accurate positioning and tracking of the weld seam through advanced visual recognition technology. Whether it is automobile manufacturing, ship construction, steel structure engineering or pipeline installation, the non-contact weld tracking system can meet your needs. It is suitable for tracking all kinds of complex weld seams, providing efficient and accurate solutions for various industries.



9、 Can be equipped with high-efficiency industrial dust collection and purification system, welding near-field smoking device

Welding produces fumes and harmful gases that not only affect the working environment, but also jeopardize the health of workers. Our high-efficiency industrial dust collection and purification systems, specially designed for welding environments, can quickly absorb and dispose of these hazardous substances, giving you a fresh, safe workspace. Our dust collection systems and near-field welding fume extractors are energy-efficient and environmentally friendly, effectively reducing energy consumption and waste emissions.



10 、 Configurable Safety Protection Hardware Systems

In Europe and the United States, safety devices for automated equipment are regulated by strict laws and regulations to ensure workplace safety and employee health. PDKJ equipment is sold worldwide and meets the highest global standards in terms of safety. Air switches, emergency stop buttons, etc., are standard.

Additional optional safety devices are: safety light grids, guardrails and



11、 According to the welding intensity, optional independent cooling heat dissipation system

PDKJ laser welding workstations come standard with built-in chiller, but in some high-intensity non-stop welding scenarios, in order to achieve stable and normal operation of the machine, optional peripheral high-power chiller, or even a centralized cooling small cooling towers, and many large sheet metal factories are even configured with centralized large cooling towers.



12、 Optional CCD LCD monitor inspection system

Visual inspection technology is applied to troubleshooting the welding process. By analyzing the monitored image data, the system can detect abnormalities in the welding process, such as weld offset, leakage and other appearance defects, so as to detect problems in time and take corresponding measures to avoid substandard product quality and ensure the stability and consistency of welding quality.



13、 Standard wire feeder

Composed of wire feeder, wire feeder tube and wire feeder, suitable for large weld seams.

After seven years of optimization, the wire feed is smooth and meets the welding needs of most products.

PDKJ's original wire feeding anti-tangling device, lifting and stretching pots, column brackets, to eliminate tangling, more comfortable to use.



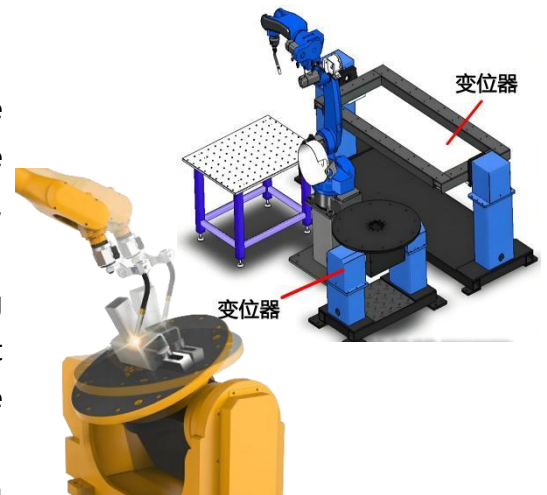
14 、 Optional Positioner to Meet Angular

Welding Needs

Robotic Welding Positioners are able to flip the workpiece to the ideal welding position, thus improving the distance compensation between the welding torch and the weld seam, achieving precise welding and stabilizing the welding quality.

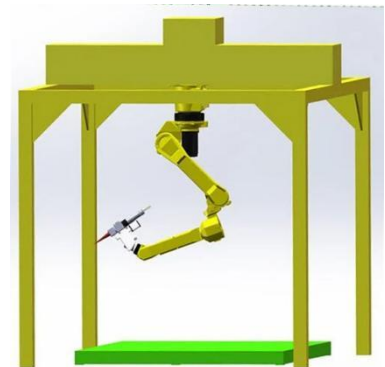
For large or difficult-to-move weldments, the Robotic Welding Positioner is able to change the angle of the weldment to rotate it along different axes, thus making the welding process more flexible.

Manual intervention can be significantly reduced, lowering production costs and increasing production speed at the same time.



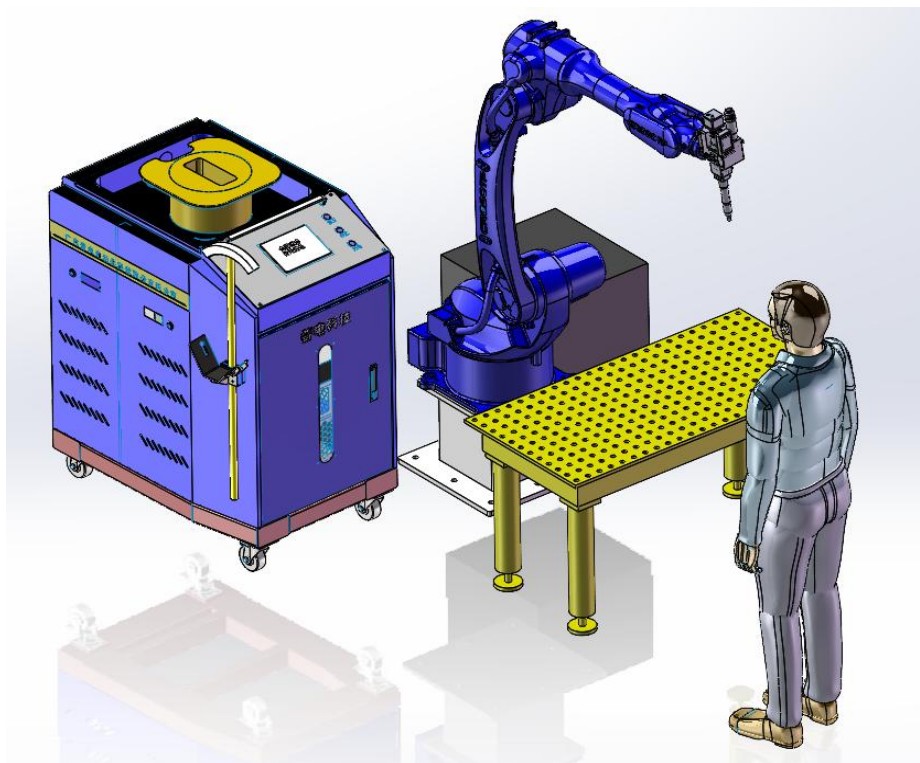
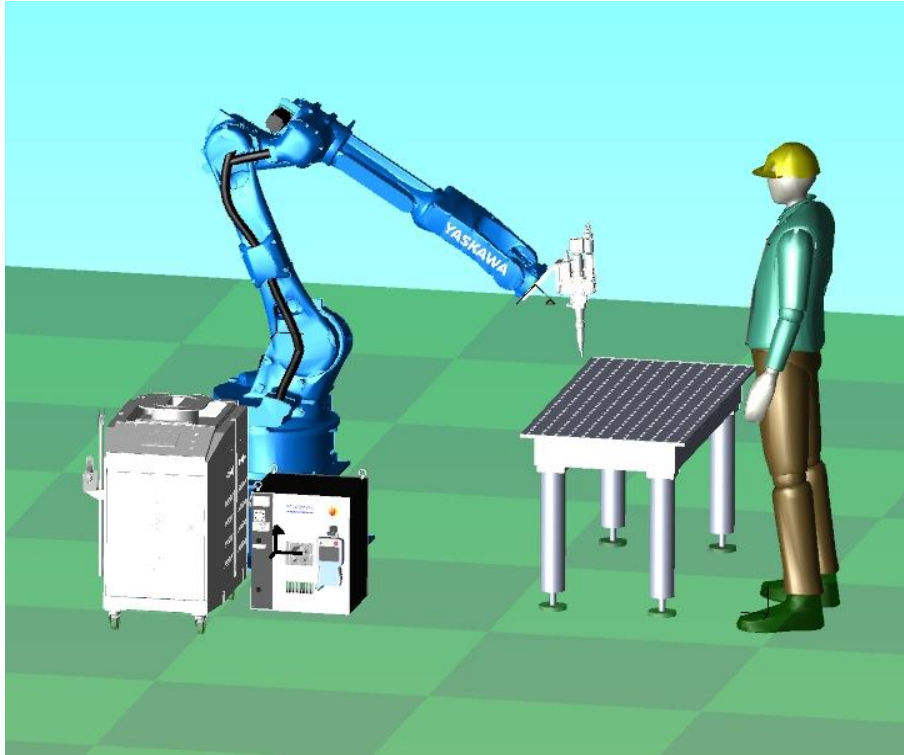
15、 Optional Gantry Inverted Lifting

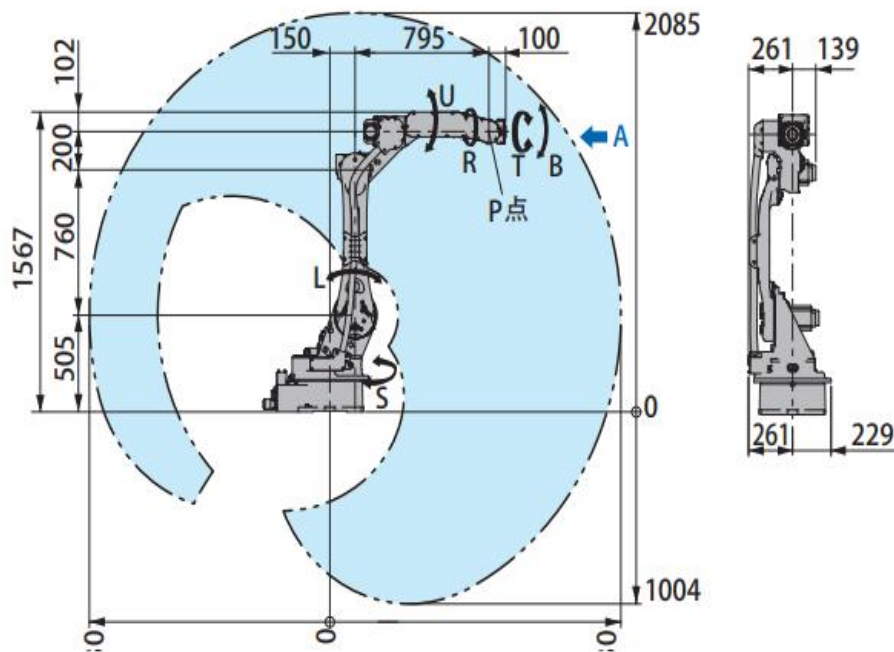
Gantry inverted lifting allows the welding robot to work in a higher position, which means that the robot can more easily access the part to be welded, reducing movement and adjustment time. In addition, welding speeds are greatly increased because the robot can weld continuously in a fixed position, eliminating the need for frequent position or angle changes.



PDKJ's laser welding robots are characterized by high efficiency, precision and stability, which can significantly improve welding quality and productivity. Whether it is large-scale heavy industrial equipment or precision electronic devices, PDKJ can provide perfect welding solutions. At the same time, PDKJ's products are also characterized by intelligence and automation, which can greatly reduce labor costs and operating difficulties, making welding work easier and more efficient.

Usage Scenarios





Norm		AR1730
Model		YR-1-06VXH25-A01
Structure		Vertical multi-joint type (6 degrees of freedom)
Removable items*1		25kg
Repeatability*2		0.02mm
Scope of work	S-axis/(rotary)	-180°-+180°
	L axis/(lower wrist)	-86°-+160
	U axis/(upper arm)*3	-180°-+180
	R axis/(wrist rotation)	-200°-+200°(-150°-+150°)*6
	B axis/(Wrist swing)	-150°-+150°(-135°-+90°)*6*7
	T axis/(Wrist rotation)	-455° -+455° (-210° -+210°)*6

Welding core components-PDKJ laser welding machine

Optional power: 1500W, 2000W, 3000W



Laser torch/scope



Manual/automatic
torch

Double Pendulum
Industrial Torch

Laser welding
galvanometer

Laser welder section



Parameter	LWM1500	LWM2000	LWM3000
Laser machine power	1500W	2000W	3000W
Input power	220V 50/60Hz	220V 50/60Hz	380V 50/60Hz
Protective gas	Argon/Nitrogen	Argon/Nitrogen	Argon/Nitrogen
Placement environment	Flat, vibration and impact free		
Working environment temperature (°C)	10-40	10-40	10-40
Working environment humidity (%)	< 70	< 70	< 70
Automatic wire feeding	Yes	Yes	Yes
Welding gun model	A/B/C Optional	A/B/C Optional	A/B/C Optional
Laser wave length	1064nm	1064nm	1080nm
Overall power	2500W	3000W	4500W
Welding interval requirements	<0.5mm	<0.5mm	<1.0mm
Aiming and positioning	Infrared	Infrared	Infrared
Robot automatic welding interface	Yes	Yes	Yes
Welding capacity / aluminum	0.2-3.0mm	0.2-4.0mm	0.2-6.0mm
Welding capacity / carbon steel	0.2-4.0mm	0.2-5.0mm	0.2-7.0mm
Welding capacity / stainless steel	0.2-4.0mm	0.2-5.0mm	0.2-7.0mm
Welding capacity / galvanized sheet	0.2-3.0mm	0.2-4.0mm	0.2-6.0mm
Welding speed	0-120 cm/Min	0-120 cm/Min	0-120 cm/Min
Weight	280kg	300kg	208kg+165kg
Overall dimension	1050*750*1310mm	1050*750*1310mm	Note: Matching external chiller



Technology drives the future, quality changes the world

The quality that can be used for 20 years



WhatsApp



Website



YouTube

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